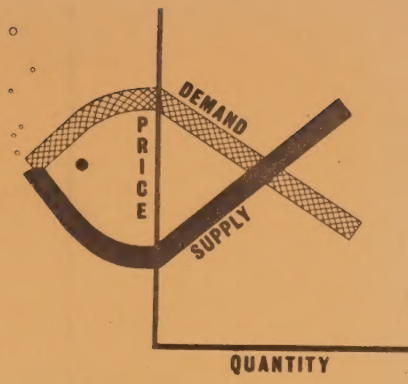

THE ECONOMIC IMPACT OF CURRENT FISHERIES MANAGEMENT POLICY ON THE COMMERCIAL FISHING INDUSTRY OF THE UPPER GREAT LAKES

by

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SUMMARY AND CONCLUSIONS

* Predation by the sea lamprey on lake trout, whitefish, and other large species has resulted in a loss of men and equipment from the upper Great Lake fisheries. There has also been a trend for previously full-time fishermen to decrease their fishing activity and in most cases to acquire other part-time employment.

* The restoration of an ecological balance is the unifying objective of biological research and management policy in the upper Great Lakes. Basically this means control of the sea lamprey and restoration of a self propagating lake trout population. Protection of the lake trout stocks, until they become self propagating, has been an accepted policy since lake trout fishing was legally closed on Lake Superior in 1962.

* Although both Wisconsin and Michigan have a stated policy of promoting a commercial fishery in which individuals can make an adequate income, these states apparently have not anticipated the full magnitude of the hardships the industry would be subjected to during the period of trout stock recovery.

* The fishing industry has been warned numerous times since 1962, by biologists and management officials, that the trout fishery on Lake Superior would not be opened before the early 1970's and on Lake Michigan before the mid-1970's. Those remaining in the fishery accepted this but had not been prepared to accept strict gear restrictions affecting their harvest of non-protected species.

* A high incidental catch of lake trout on Lake Michigan and Lake Superior in 1967 resulted in recommendations that strong measures be taken to protect the trout stocks. Prohibition of large mesh gill nets in Michigan and Wisconsin waters of Lake Superior and certain Michigan waters of northern Lake Michigan and depth restrictions on small mesh gill nets during the spring and summer of 1968 have significantly reduced the income of at least 200 commercial fishing operations providing at least part-time employment for between 250 and 350 fishermen. If gear restrictions are needed to protect planted salmon and splake (hybrid trout) in Lake Huron, as many as 42 fishing operations could be disrupted in 1969. Most of these operations are casual and part-time; thus about 60 to 70 individuals would be involved. An incidental catch of lake trout greater

than 10 percent would result in closure of the Wisconsin Lake Michigan gill net fishery. This would close down an estimated 78 operations for an indeterminable portion of the year. In all, gear restrictions and closures could significantly reduce the income for over 300 operations employing from 400 to 500 individuals during the next several years in the upper Great Lakes.

* In addition to strict gear limitations Michigan and Wisconsin have instituted a gill net permit system to exclude the very small fishermen not economically dependent on fishing. Michigan's criteria for receiving a permit was to have had a catch valued at at least $1,000 in at least one of the five years previous to 1968. Exclusion of this group of fishermen should not impose significant financial hardships on those involved.

* The issue of the fishery managers' responsibility to the commercial industry has not yet been squarely faced. It is not sufficient to dismiss large numbers of fishermen just because they have been too stubborn to remove themselves from the fishery. Also, it is not sufficient to avoid, under the guise of the sanctity of the restoration program, the transitional problems in moving toward a limited entry fishery.

Steps must be taken immediately to assist the fisheries on Lake Superior, Lake Michigan, and Lake Huron in adapting with minimum hardship to limited entry and in turn gear restrictions. Already considerable hardship has resulted from severe gear restrictions.

* The details of phasing out part of the existing fishery must be planned and these details must be reconcilable with specific management policy. As the individual states hold the authority for setting and implementing management policy they must also hold the primary responsibility for planning the details of industry transition to a limited entry fishery. The State of Michigan is already taking steps toward establishing a mechanism whereby vessels and equipment will be purchased from those forced out of the fishery. Such an assumption of responsibility should be encouraged.

* It is not the Federal Government's responsibility to financially assist fishermen who may suffer under state regulatory power. To provide direct assistance would set an undesirable precedent by relieving the states of their responsibility.

* The U. S. Bureau of Commercial Fisheries has the expertise to provide valuable assistance to the states in developing comprehensive management plans. Bureau biologists are already called upon extensively for scientific advice. Unfortunately, the Bureau's industry oriented programs have not been well received, especially by the Michigan Department of Conservation. This situation is symptomatic of the state's fear that assistance to commercial fishing poses a threat to sport utilization of the fishery resource. There are no personnel at the state level in any of the upper Great Lake States responsible for representing the needs of the commercial fishery in policy formulation. Rectification of this situation would be a desirable step toward more prudent management.

RECOMMENDATIONS

1. THE FEDERAL GOVERNMENT SHOULD NOT PROVIDE FINANCIAL REDRESS TO FISHERMEN DIRECTLY INJURED BY STATE FISHERY MANAGEMENT POLICY- UNLESS THAT POLICY CAN BE SHOWN TO BE SIGNIFICANTLY BENEFICIAL TO THE NATION OR A LARGE GROUP OF STATES.

2. THE STATES OF MICHIGAN AND WISCONSIN, HAVING THE LARGEST SEGMENT OF THE COMMERCIAL FISHING INDUSTRY OF THE UPPER GREAT LAKES, SHOULD BE STRONGLY ENCOURAGED TO TAKE IMMEDIATE ACTION TO PURCHASE THE BOATS AND GEAR OF THOSE "PROFESSIONAL" COMMERCIAL FISHERMEN WHO CAN NO LONGER SHOW AN ADEQUATE RETURN FROM FISHING GIVEN THE GILL NET RESTRICTIONS DEEMED NECESSARY BY MANAGEMENT OFFICIALS.

3. THESE STATES SHOULD BE ENCOURAGED TO GIVE PRUDENT CONSIDERATION TO THE ROLE OF A COMMERCIAL FISHERY IN THE OPTIMUM UTILIZATION OF THE FISHERY RESOURCE. GREATER EMPHASIS SHOULD BE PLACED ON THE ECONOMICS OF RESOURCE MANAGEMENT AS A NECESSARY PREREQUISITE OF PROPER PLANNING.

4. IT IS RECOMMENDED THAT A MASTER PLAN FOR FISH RESOURCE DEVELOPMENT AND UTILIZATION BE DEVELOPED FOR LAKE HURON, LAKE MICHIGAN, AND LAKE SUPERIOR AND BE PREPARED UNDER THE AUSPICES OF THE GREAT LAKES

FISHERIES COMMISSION. MANAGEMENT OFFICIALS FROM EACH OF THE UPPER GREAT LAKE STATES SHOULD PLAY A KEY ROLE IN THE DEVELOPMENT OF SUCH A PLAN.

General Economic Dimensions of the Upper Great Lakes Commercial Fishing Industry

The commercial catch of fish on the Great Lakes in 1966 (the most recent year for which both value and quantity statistics have been published) was 69.5 million pounds valued at $5.9 million. During that same year there were 2,118 fishermen reported on the Great Lakes. Catch value, and employment on the three upper Great Lakes (Huron, Michigan, and Superior) were 54.8 million pounds, $4.5 million and 1,536 fishermen.

The upper Great Lakes fishery from the post war period to date is characterized by both an absolute decline in the number of fishermen and fishing craft and a shift from a predominantly full-time fishery to a predominantly part-time fishery. The estimated 1,536 fishermen reported on the upper Great Lakes overstates the amount of employment provided by these fisheries. Figure 1 shows a breakdown of regular, part-time, and casual fishermen by vessels and boats for 1966. The categories of regular, part-time, and casual are determined by the number of days of participation in the fishery and do not necessarily imply the level of income dependency upon fishing. Only 10 percent (161) of upper Great Lakes fishermen fished regularly - i.e., more than 161 days in 1966. Another 31 percent (482) fishermen fished part-time (54 to 161 days).

Figure 1: Summary of U.S. Operating Units - Upper Great Lakes for Selected Years

	1954[1]				1959[1]				1963[1]				1966			
	Lake Huron	Lake Michigan	Lake Superior	Total	Lake Huron	Lake Michigan	Lake Superior	Total	Lake Huron	Lake Michigan	Lake Superior	Total	Lake Huron	Lake Michigan	Lake Superior	Total
Fishermen																
On vessels																
Regular													3	114	44	161
Part time	133	[illegible]	527	1444	71	614	411	1096	247	528	345	1120	53	144	64	261
Casual													38	101	70	209
On Boats and Shore																
Regular	184	411	235	820	99	166	125	390	40	82	64	186	3	--	18	21
Part time													72	77	72	221
Casual	196	795	267	1262	203	774	321	1298	279	727	371	1377	134	322	207	663
Total Fishermen	513	1984	1029	3526	373	1554	857	2784	566	1337	780	2683	303	758	475	1536
Vessels, Motor																
Regular													1	38	15	54
Part time													25	71	32	128
Casual													19	50	35	104
Total vessels	48	284	173	505	30	238	166	434	81	187	125	393	45	159	82	286
Total gross tonnage[2]	392	4072	2011	6475	272	3509	1887	5668	1535	4016	2018	7569	775	3483	1423	5681
Boats																
Motor																
Regular													1	--	6	7
Part time													36	40	36	12
Casual													99	212	174	435
Total Motor Boats	184	508	361	1053	137	391	319	847	172	336	238	746	136	252	216	504
Other																
Regular													--	--	--	--
Part time													3	7	--	10
Casual													10	9	1	20
Total Other Boats	73	183	37	293	46	112	28	186	47	28	11	86	13	16	1	30

Source: Fishery Statistics of the United States, Statistical Digest
1/ Regular, part time, and casual not tabulated before 1963. Summing across Lakes subject to slight duplication.
2/ Reported in Net Tons through 1959.

Thus in 1965, 57 percent (872) of upper Great Lakes fishermen fished less than 54 days. Prior to 1963 fishermen and vessel data were not tabulated on a regular, part-time and casual basis.

Biological Background

In the past several decades changes in species composition in the Great Lakes have been greatly accelerated. Up to the mid-1930's certain fish populations had been sensitive to selective fishing but the invasion of sea lamprey resulted in a rapid sequence of catastrophic changes.[1/] The preferred higher value species notably lake trout and whitefish, which had provided the economic base of the Great Lakes commercial fisheries since their beginning, started to decline in abundance in the upper Great Lakes as a result of the lamprey invasion. There had been, however, isolated cases of overfishing. The whitefish population declined in the early 1930's when use of the efficient deep trap net spread throughout Lake Huron. There is evidence that by the time lamprey predation became significant the trout population in Lake Michigan may have been in a state of decline as a result of heavy fishing pressure during the war. Of the upper Great Lakes, Lake Huron was the first to succumb

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1/ A comprehensive examination of changes in the biological base of the Great Lakes fisheries is given by Stanford H. Smith, "Species Succession and Fishery Exploitation in the Great Lakes," J. Fish. Res. Bd. Canada 25(4): 667-693, 1968.

Figure 2 -- Lake Huron landings for selected years (thousands of pounds or dollars)

	1950		1955		1960		1966	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Carp	1180.6	40.9	1373.3	52.2	1333.4	66.7	831.5	44.9
Catfish	161.9	34.9	355.0	79.9	277.4	66.6	166.0	51.3
Chubs	82.8	18.6	316.9	61.2	2936.1	704.7	807.3	156.6
Lake Herring	1748.2	79.7	368.5	37.6	44.6	5.8	16.4	2.5
Pike or Pickerel	7.0	.9	32.4	4.9	130.4	23.5	1.5	0.5
Suckers	977.4	45.4	1023.9	56.2	454.1	27.2	313.3	13.5
Common-White fish	114.2	50.4	66.2	37.4	338.4	199.7	171.7	94.1
Yellow Perch	405.5	65.8	585.5	87.8	508.7	76.3	1318.1	150.3
Yellow Pike	211.9	58.2	142.1	43.8	136.3	66.8	51.4	27.9
Other	183.4	16.5	288.9	23.5	178.7	11.7	91.6	7.7
Total	5072.9	411.3	4552.7	484.5	6338.1	1249.0	3768.8	549.3

Source: Fishery Statistics of the U. S., Branch of Statistics, U. S. Bureau of Commercial Fisheries

Figure 3 -- Lake Michigan Landings for Selected Years (thousands of pounds and dollars)

	1950		1955		1960		1966	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Alewives					2369.1	43.9	29003.8	435.1
Carp	1146.3	45.8	1856.1	92.7	1415.6	49.4	2714.3	54.3
Chubs	9290.7	1401.3	10894.9	1655.8	12659.3	1591.0	7227.3	1434.8
Lake Herring	7491.7	382.8	6086.5	335.0	282.8	25.4	49.4	7.0
Lake Trout	53.7	20.7	(1)	-	.1	.1	.1	.1
Smelt	2417.3	230.7	5416.0	153.6	3267.4	110.3	1110.5	36.7
Sucker "Mullet"	1228.0	62.3	683.9	47.2	766.8	35.5	403.3	13.0
Common-Whitefish	2360.8	894.0	375.6	195.6	124.1	73.9	1422.1	698.1
Yellow Perch	1483.5	233.6	3549.9	436.0	3285.0	459.9	736.3	114.5
Yellow Pike	1349.2	359.3	975.9	278.4	118.2	47.3	24.5	11.0
Other	205.4	30.7	197.1	27.2	72.2	10.3	72.6	11.3
Total	27026.6	3661.2	30035.9	3221.5	24310.6	2447.0	42764.2	2815.9

Source: Fishery Statistics of the U. S., Branch of Statistics, U. S. Bureau of Commercial Fisheries

Figure 4 -- Lake Superior Landings for Selected Years (thousands of pounds and dollars)

	1950		1955		1960		1966	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Chubs	28.8	3.9	153.7	22.2	1258.3	255.1	1957.0	285.6
Lake Herring	8157.5	321.1	10133.9	450.6	10805.7	607.1	4507.7	470.4
Lake Trout	3201.9	1223.0	2100.9	920.4	380.0	217.4	119.5	79.5
Smelt	.9	.1	74.3	3.1	946.8	43.4	1264.7	73.1
Common-White-fish	1039.9	412.5	1003.9	469.6	284.4	169.3	341.2	179.2
Other	155.3	16.8	114.4	20.0	95.3	8.2	68.0	7.2
Total	12584.3	1977.4	13581.1	1885.9	13770.5	1300.5	8258.1	1095.0

Source: Fishery Statistics of the U. S., Branch of Statistics, U. S. Bureau of Commercial Fisheries

to lamprey predation in the early 1940's. Lake Michigan was second in the late 1940's and Lake Superior third in the mid-1950's.

A decline in the preferred species did not result in a collapse of the commercial fishing industry. The industry adjusted to a lower trout, whitefish, and large chub catch by turning to lower valued species such as small chubs and alewife. The shift from high to lower valued species is evidenced by a decline in the total value of the commercial catch for each of the three upper Great Lakes since 1950, while the weight of the catch has fallen much less and even increased in Lake Michigan - Figure 2, 3, and 4.

Concern over the future of the Great Lakes fisheries had become quite intense in both Canada and the United States by the early 1950's. This concern can be traced through the establishment of the Great Lakes Fishery Commission in 1955, the development of an effective lampricide by the U. S. Bureau of Commercial Fisheries, and establishment of a lake trout planting program by the U. S. Bureau of Sport Fisheries and Wildlife, the States of Michigan, Wisconsin and Minnesota. Along with the development of these programs the various cooperating agencies came to recognize the necessity of an overall management program on the Lakes. Only

with increased understanding of the species interaction and selective limitations on fishing pressures can it be assured that the lamprey control and trout restocking programs will lead to a desired species mix providing a stable basis for either or both a sport and commercial fishery.

With incontrovertible evidence of the effectiveness of sea lamprey control in Lake Superior available and to assure success of the lake trout restocking program, lake trout fishing was closed in Lake Superior, to all commercial operations in 1962. The same measures were taken in 1965 in Lake Michigan as sea lamprey control progressed in that Lake. At the time Lake Superior was closed, the Great Lakes Fishery Commission predicted that it would be at least a decade before the trout population would be sufficiently restored for commercial harvesting. Small regulated catches of lake trout have been allowed since that time under special research contracts to provide information necessary to monitor the progress of the trout recovery.

The apparent success to date of Michigan's salmon planting program has introduced a new element into management of the Great Lakes. Coho salmon were first stocked in Lake Michigan by the State of Michigan in 1966. Since then the salmon have become a species protected from commercial fishing along with the lake trout. Conservation officials

in Michigan readily admit that coho and chinook salmon are being planted in order to develop a bigger sport fishery. It is a widespread belief among state conservation officials that sport fisheries generate greater economic benefits for the Great Lake States than does commercial fishing and thus should have priority over the fish resource. Even is sport fisheries are able to generate greater economic benefits there is no a priori reason to conclude that there need be a reduction in commercial fishing effort.

Fishery Management Policy on the Upper Great Lakes, Theory and Practice

Fishery management in the Great Lakes comes completely under the jurisdiction of the individual states and the Province of Ontario. The Great Lakes Fishery Commission provides a forum to coordinate fishery research and management programs but has no authority to enforce its recommendations. The U. S. Bureau of Commercial Fisheries is responsible for most of the research, past and present, conducted on the aquatic living resources of the Great Lakes. Although the Bureau of Commercial Fisheries possesses the largest single source of expertise on the Great Lakes it has no authority to establish management policy. Perhaps the greatest contribution of the Bureau of Commercial Fisheries to management policy in the upper Great Lakes at present is to generate the basic knowledge needed for rational management policy.

Many conflicts and much disagreement have developed around the management issues of the Great Lakes. Some of the conflicts will be of limited consequence but others are fundamental. The general principle of restoration of ecological balance is supported by all interests. Dissention has arisen in the development of specific management policy and regulation. Important areas of conflict are pointed out in the discussion that follows.

Up to 1962, when commercial lake trout fishing was banned in Lake Superior, state conservation officials had used restrictions on gear-type, and time and location of its use as the sole tool of controlling exploitation of individual fish species in the Great Lakes. Because of the absence of basic biological knowledge and appropriate monitoring techniques, the effectiveness of management efforts was freqently open to question. From 1962 until the spring of 1968 there was little change in conservation policy except for the limitations on trout fishing by research permit only and under quota. Most individuals optimistically remained in the fishery in spite of adverse biological conditions and warnings that it would be a number of years before conditions would be improved.

Limited Entry

It has long been recognized that the traditional approach to protecting fish stocks through restrictions on gear and time and location of its

use forces inefficiency on the harvesting operation. Economists who have turned their attentions to the problems of commercial fisheries have supported the concept of limited entry. A limited entry policy restricts fishing pressure by limiting the number of fishing operators while allowing each operator to be as efficient as possible. In its most sophisticated form limited entry is used to maximize the economic welfare derived from a fishery resource. In practice, however, limited entry can serve various goals. Limited entry regulations on the British Columbia salmon fishing fleet are to become effective in 1969. The goals of these regulations are to reduce the cost of harvesting salmon and to improve the economic welfare of the salmon industry. Michigan and Wisconsin have passed limited entry legislation to protect the fishery resources of the Great Lake waters for whatever use might be deemed most desirable. Michigan and Wisconsin policy does provide for a "reasonable" livelihood for those fishermen allowed in the fishery. 2/

Because any benefits, which may be generated as a result of limiting entry, will accrue either to the remaining commercial fishermen or to sport fishermen, it is reasonable to expect that either one, or both, of these groups could, by giving up part of their increased benefits, offset the hardship imposed on those removed from the fishery. If there is not a net gain in benefits limiting entry is not justified.

2/ An excellent and widely referred to summary of fisheries management policies including limited entry is found in James A. Crutchfield, editor, The Fisheries Problems in Resource Management, University of Washington Press, Seattle, 1965.

Since both those injured and those benefitted are citizens of the state controlling the resource it is reasonable for that state to assure an equitable redistribution of benefits. Michigan, Wisconsin and any other Great Lake State removing individuals from their commercial fishery should be responsible for compensating those removed.

The continuing implementation of limited entry and gear restrictions will result in increasing hardship in the short run for some segments of the commercial fishing industry. If these hardships are to be minimized management officials and the industry must work much closer than they have in the past. Some Michigan conservation officials recognize the possibility of implementing limited entry by buying out those marginal fishermen who would like to leave the fishery, but who are locked in to their investments in vessel and equipment. Such a plan would help alleviate the hardships of being excluded from the fishery. The more immediate concern, however, is what immediate problems are arising with the closure of the gill net fisheries?

Current fishery management policy in the Great Lakes is resource oriented. The commercial fishing industry has been considered primarily in terms of its role in achieving some ideal species mix. Everyone connected with management policy formulation and implementation has professed an interest in a healthy commercial fishing industry at such a time as the ideal species mix is achieved and stabilized.

In the past, little serious consideration has been given to the problems of transition from an existing fishery to a limited entry fishery.

Responsibility for industry adjustment to fishery management policy has been placed upon the fishermen. What has been needed is greater responsibility assumed by management agencies in planning for the transition period. A positive action program should already have been implemented phasing out those segments of the industry which cannot survive during the transition and assisting those which the state would expect to continue fishing. A certain number of commercial harvesting operators are needed for monitoring trout stocks and other management objectives.

The future of prudent planning in this area looks more promising than it has in the past. Management officials, especially in Michigan, are beginning to take economic factors into consideration in formulating management policy for limited entry. There has also been discussion of economic relief in the form of purchasing gear and vessels from fishermen forced out of the fishery. The Bureau of the Budget, Executive Office of the Governor, State of Michigan is conducting a "Great Lakes Fish Resource Development Study" funded under the Anadromous Fish Act (P. L. 89-304). The study is an evaluation of the present fishery management program on Lakes Michigan, Superior, and Huron. Commercial fishing has an important place in the study

and hopefully the information generated will be used not only for long range planning but will also point out problems of transition. In Wisconsin, the Wisconsin Department of Natural Resources, Division of Conservation has contracted with the Center for Natural Resource Policy Studies at the University of Wisconsin to investigate "The Alternatives for Lake Superior Trout Management." This study is funded under the Commercial Fisheries Research and Development Act (P. L. 88-309). The Wisconsin Study is to be completed by December 31, 1968, and the Michigan Study by June 30, 1969. These two studies should provide information needed to develop decisive programs to lessen the commercial fishing industry's burdens during the transition period as well as to assure the development of a viable industry.

The Closure Controversy :

The most pressing problems faced by Lake Superior and Lake Michigan fishermen center around recent temporary closures of the gill net fisheries and to a lesser extent around the permit systems of Michigan and Wisconsin which are being used as a stop gap until limited entry is achieved.

In a special meeting of the Lake Michigan Committee, Great Lakes Fishery Commission in May 1967 it was reported:

> "The incidental catch of planted lake trout in large mesh gill nets fished for whitefish in the northern portions of Lake Michigan had increased substantially in the spring of 1967. The improved conditions of whitefish stocks had resulted in an expansion of the large mesh gill net fishery over the past three years as illustrated by the increasing quantities of 4 1/2 - inch gill net lifted - 12 million feet in 1964, 20 million in 1965, and 34 million in 1966. In the spring of 1967 lake trout from the 1965 planting

had reached a size to become vulnerable to the large mesn gill nets and Michigan feared that the large incidental catches might jeopardize the rehabilitation program."3/

Although during the same period whitefisn fishing was not as intense in Wisconsin waters, northern Lake Michigan planted lake trout represented in some instances from 20 to 50 percent of the catch in 4 1/2 inch gill net set for whitefish. From late March through early May 1967 Indiana commercial fishermen had been fishing 4 1/2 inch gill net for coho salmon with both total catch and catch rate per unit of effort quite high. By July 1967 Indiana and Illinois had outlawed commercial fishing for coho and lake trout.

To date there have been few management restrictions on Lake Huron, but considering that coho and chinook salmon are being planted in that Lake, regulations could be expected by next spring.

Although Wisconsin fishermen had been under a 10 percent law, which provided for curtailment of fishing with any gear when an operator's catch of protected species reached 10 percent of his total catch with that gear, it had not been strictly enforced in the past. With little previous pressure from Wisconsin conservation officials, Wisconsin gill-netters on Lake Superior were unprepared to survive a change in policy to strict enforcement this year. Perhaps Michigan fishermen on Superior and northern Lake Michigan should have been

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3/ Unpublished minutes of the special meeting of the Lake Michigan Committee Great Lakes Fishery Commission, May 8, 1967.

prepared in light of the hard line Michigan conservation officials have taken, but it is evident that they also were unable to see or to accept the impossible situation the gill net fishery was in - especially the large mesh fishery.

The mechanics of implementing a limited entry fishery may be academic to many fishermen whose operations were curtailed in the spring and summer of 1968. Lack of planning for restricting the use of gill nets has resulted in sudden economic disruption of this fisnery.

At the time the permit system was established in Michigan tne commercial fishermen's advisory group, comprised of commercial fishermen, was in general agreement with the procedures of the system. The definition of a qualified commercial fisherman was made liberal enough to avoid the possibility of excluding anyone whose economic welfare was significantly dependent on fishing. The permit system applies to the use of 4 1/2 inch or larger gill nets and small mesh gill nets in waters less than 35 fathoms in depth. All other gear currently in use may be fished just as before.

Except for the exclusion of a number of part-time fishermen the use of commercial fishing gill net permits has not significantly altered the authority of the Michigan Department of Conservation in

its pursual of fishery management. Closure of fishing areas to certain gear for periods of time has been a common and accepted tool of management. The general amendments to gill net permits issuing specific instructions as to closures and gear restrictions are aimed solely at promoting the recovery of valuable species, especially the lake trout. A summary of pertinent amendments from April through July 1968 is included in the Appendix as is a copy of Department of Conservation Commercial Fishing Order No. 16.

Economic Impact of Gill Net Closure

It is impossible to estimate the total impact of the gill net closures this past spring and summer without precise information on employment alternatives, other sources of income, and the financial asset position of each individual affected. From data compiled by the Bureau of Commercial Fisheries, Branch of Statistics, it is possible to estimate the number of commercial fishing operations at various levels of dependency on the gill net fishery - Figure 5.

Commercial fishing licenses from each State requires that each licensee report his complete fishing activity with respect to species and volume caught by gear and the amount of effort and days fished for each gear. Wisconsin does not require reporting of gross revenues from each gear species category whereas Michigan and Illinois do. Because it is more meaningful to discuss gross

Figure 5 -- Distribution of Michigan and Wisconsin Commercial Fishing Operations by Gross Revenue and Percent of Gross Revenue Derived from Gill Nets, 1967

Percent of Gross Revenue from Gill Nets / Gross Revenue from all Fishing	Michigan Lake Huron					Michigan Lake Michigan					Michigan Lake Superior					Michigan Total				
	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total
0-999	30	4	6	42	82	7	2	0	98	107	0	0	2	81	83	37	6	8	221	272
1000-4999	17	5	4	21	47	10	6	2	35	53	2	0	1	49	52	29	11	7	105	152
5000-9999	5	1	2	6	14	8	1	0	26	35	1	0	0	15	16	14	2	2	47	65
10000-14999	0	0	0	6	6	5	0	0	14	19	0	0	0	9	9	5	0	0	29	34
15000-19999	3	1	0	1	5	2	0	0	9	11	0	0	0	4	4	5	1	0	14	20
20000-24999	0	0	0	1	1	2	1	0	2	5	0	0	0	2	2	2	1	0	5	8
25000- and up	0	0	0	1	1	4	0	0	10	14	1	0	0	4	5	5	0	0	15	20
Total	55	11	12	78	156	38	10	2	194	244	4	0	3	164	171	97	21	17	436	571

Percent of Gross Revenue from Gill Nets / Gross Revenue from all Fishing	Wisconsin Lake Michigan					Wisconsin Lake Superior					Wisconsin Total					Michigan and Wisconsin Total				
	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total	0	1-25	26-75	76-100	Total
0-999	13	0	5	83	101	0	0	0	27	27	13	0	5	110	128	50	6	13	331	400
1000-4999	17	6	3	37	63	3	0	0	13	16	20	6	3	50	79	49	17	10	155	231
5000-9999	7	1	0	12	20	0	0	0	6	6	7	1	0	18	26	21	3	2	65	91
10000-14999	8	2	0	7	17	0	0	0	5	5	8	2	0	12	22	13	2	0	41	56
15000-19999	4	0	1	4	9	2	0	1	3	6	6	0	2	7	15	11	1	2	21	35
20000-24999	3	0	2	8	13	0	0	0	0	0	3	0	2	8	13	5	1	2	13	21
25000- and up	2	0	0	6	8	0	0	0	0	0	2	0	0	6	8	7	0	0	21	28
Total	54	9	11	157	231	5	0	1	54	60	59	9	12	211	291	156	30	29	647	862

Source: Branch of Statistics, U. S. Bureau of Commercial Fisheries

Note: Revenue distribution of Wisconsin operations estimated by applying modal prices from Michigan operations to volume of Wisconsin catch.

incomes than catch volume the description of the Lake Michigan and Lake Superior gill net fisheries is more detailed than the discussion of the Wisconsin gill net fisheries. The actual hardships suffered by closure of these fisheries cannot be ascertained without more comprehensive information on each operator. Some individuals showed a very low productivity in 1967 during the time they fished. Other individuals appeared to have highly productive operations even though they are considered less than full-time fishermen and might have to sacrifice income if they were to give up fishing.

Michigan - Lake Huron -- Lake Huron commercial fishermen have not yet been troubled by closure of the gill net fishery. Increased emphasis on the sea lamprey control program in that lake and increased salmon and splake (a trout hybrid) plantings next year may produce incidental catches in gill nets high enough for Michigan to impose gear restrictions. Of the 156 fishermen on Lake Huron, 82 earned less than $1,000 in 1967. Of the remaining 74 fishermen only 49 were dependent at all on gill nets. Closure of more than a few weeks would be serious to at least 15 fishermen grossing over $5,000 with over 75 percent of their gross coming from gill net fishing.

Michigan - Lake Michigan -- Of the 244 licensed Michigan fishermen on Lake Michigan in 1967, 206 used gill nets. One hundred of the 206 fishermen grossed less than $1,000 from all fishing activity.

Of the remaining 106 gill net fishermen 96 depended on gill nets for over 75 percent of their revenue.

Until the trout population has recovered, severe limitations will remain on gill net, especially large mesh gear. It is probable that effective limitation must involve a very large reduction in gill net effort. To exclude only those fishermen who gross less than $1,000 annually from fishing, as was done under Michigan's permit system, means less than a 10 percent reduction in effective effort. The 100 gill net fishermen who grossed less than $1,000 from all their fishing in 1967 accounted for less than 10 percent of gross revenues assignable to large mesh gill nets. Actually, the reduction in fishing pressure would be considerably less than 10 percent because the permit criteria of having earned at least $1,000 from fishing in at least one of the previous five years would affect less than 100 gill net operators. Another 57 operators grossed less than $1,000 using gear other than gill nets. It has been suggested that $10,000 gross revenue is the absolute lower limit of adequate income for a full-time operator. In 1967, 35 of the 206 gill net operators grossed at least $10,000. These operators accounted for 70 percent of the gill net catch. It seems doubtful that those grossing over $10,000 could be assured that they would not be subjected to occasional closures due to high indidental catch of trout or salmon.

Michigan - Lake Superior -- In 1967 there were 171 Michigan fishermen on Lake Superior. One hundred sixty-seven of these fishermen showed receipts from gill net fishing. Eighty-three of the 167 operators had gross income from large mesh gill nets of under $1,000. The value associated with the 83 operators represented 4 percent of the value of the gill net catch. Nineteen of the 98 gill net operators had a gross income of at least $10,000 from all of their fishing activity but they accounted for 60 percent of the value of the gill net catch.

As in Lake Michigan there was considerable variation in the average daily productivity of Lake Superior operators. Some full-time operators were grossing less than part-time operators. It is impossible to establish a simple yet equitable criterion for inclusion or exclusion of operators from the fishery. All of the operators grossing over $10,000 using gill nets are receiving nearly all of their income from those nets. Frequent restrictions on gill netting may mean a significant reduction in their total income. Two economic studies of Lake Superior gill net operations have been concerned with the large full-time operations.[4/] These studies have been concerned only with the economics of more productive full-time

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4/ Great Lakes Fishery Commission, An Economic Evaluation of Sea Lamprey Control and Lake Trout Restoration in Lake Superior, Ann Arbor, 1968.
U. S. Bureau of Commercial Fisheries, An Analysis of the Present Status and Future Potential of the Lake Superior Commercial Fishing Industry. Economic Development Administration Technical Assistance Project, U. S. Department of Commerce, Washington, D. C. 1966

operators and not with the role of fishing in the income structure of part-time fishermen. Even a few operators, falling into the casual group on the basis of days fished, appear to be making a substantial contribution to their income from fishing - over $4,000 gross in several instances. These individuals may not have aternative employment competitive with fishing. The data also suggest that some part-time individuals have such a small gross for the time spent in fishing that their income might be improved if they were to enter some other employment.

Wisconsin - Lake Superior -- In 1967 there were 60 Wisconsin licensed operators on Lake Superior. Wisconsin requires the periodic reporting of pounds landed but not of value. Value of landings was estimated in this study by applying the modal price of each species for Michigan to the catch of that species by each Wisconsin operation. Fifty-five of the 60 Wisconsin operations fished gill nets with 54 operations being almost wholly dependent on gill net. Half of the 54 operations grossed under $1,000. Only 7 operations grossed over $10,000 and none grossed over $20,000.

In the spring of 1968 there were about 30 Wisconsin operators substantially dependent on large mesh gill nets. About half of these operators held special trout permits. The other 15 fishermen

were allowed an incidental trout catch of only 10 percent of their catch. Under Wisconsin law a fisherman must cease fishing the gear when the incidental catch of trout reaches 10 percent. By midsummer all permit fishermen had filled quotas set by the Conservation Department and were then subject to the 10 percent regulation. Unfortunately the incidental catch of lake trout in Wisconsin waters had tended to be greater than 10 percent. Nonpermit fishermen had had to cease operations earlier so that by August no one was fishing large mesh gill nets.

It is not known what the economic loss has been to those operators who ceased or drastically curtailed fishing. Since employment opportunities are scarce in the Superior region and most fishermen lack transferrable skills it can be concluded that most and perhaps all of the gill net fishermen were financially injured. An estimate by Bureau of Commercial Fisheries personnel on Lake Superior puts the value of gear and vessels of the 30 major Wisconsin operators at no more than $200,000 fair market value. Most of the vessels and boats involved are of wooden construction of either pre-World War II or early post war vintage.

Wisconsin - Lake Michigan -- Of a total of 231 Wisconsin operations on Lake Michigan in 1967, 177 operations showed revenues from gill

nets. Excluding operations only marginally dependent on gill nets and operations grossing under $1,000 there were 80 operations significantly dependent on gill nets. Twenty-one gill net operations grossed over $1,000 and 16 grossed over $20,000. Gill net restrictions have the potential of eliminating not only 40 smaller operations but also between 30 and 40 large and medium operations.

Conclusion -- In 1967 there were 862 U. S. commercial fishing operations in the three upper Great Lakes. Seven hundred six operations were dependent partially or wholly on gill nets. Six hundred forty-seven operations were almost wholly dependent on gill nets. It is unlikely that individuals grossing under $1,000 would be seriously injured if excluded from the fishery. There are then, at least 332 upper Great Lakes fishing operations grossing at least $1,000 with over 25 percent of the gross derived from gill net fishing, Figure 5. These operations provide employment for between 400 and 500 individuals.

It is the long range objective of Michigan and Wisconsin conservation officials to reduce the number of operations, thereby increasing the average income. Given an equitable procedure for decreasing the number of operators this is a desirable objective. The immediate

problem in the upper Great Lakes centers on serious losses of income, but the uncertainty of future closures will result in in a drastic reduction in the size of the industry, including those individuals who would have constituted the industry under a limited entry fishery.

Orderly attrition is necessary to minimize the loss of fixed capital in the fishery. The 1966 EDA study of Lake Superior estimated the depreciated value of vessel, engine, equipment on the vessel, and nets to be $7,688 for a typical full-time gill net operation. The estimated $200,000 value for 30 Wisconsin Lake Superior operations in the summer of 1968 gives an average of $6,666 per operation. Considering nearly three years of additional depreciation on the operations surveyed in 1965 (1966 EDA Lake Superior Study) an average value of $7,000 would be a reasonable estimate for upper Great Lake gill net operations. The minimum value of all gill net vessels and equipment on the upper Great Lakes could be placed at close to $5 million. This value, however, does not include wharfs, sheds, shore facilities, and other shore equipment which would probably have little income value outside of fishing.

APPENDIX

SELECTED POLICY STATEMENTS

AND REGULATIONS

POSITION STATEMENT ON FISHERIES MANAGEMENT
MICHIGAN FISH PRODUCERS--FALL 1967

The Michigan Fish Producers are in favor of responsible scientific management of the fisheries of the Great Lakes. We are willing to back the Conservation Department in this.

The permit system, limited entry and gill net controversy, however, appear to be largely out of perspective. During the year 1968, commercial fishing was to be permitted, with few restrictions over past regulations, to provide data on supplemental catch, depth and other similar matters to provide a large volume of data upon which future management would be based. The object of the future regulations would be to protect the ultimate supply and not necessarily to restrict the commercial fishery to benefit the sport fishery when conservation is not an issue. There is no point in restricting when the supply of fish sought after is not in short supply and underharvested.

The Department is the agency that is charged with management of the fisheries, both sport and commercial. From the actions of this past year we believe the Department has shirked its responsibility toward the commercial fishing industry. Strange as it may appear, we believe the Department should look after the welfare of the commercial fishermen. When limited entry was first proposed we felt the Department was beginning to assume such responsibility since limited entry is an economic rather than a conservation tool. However, it now appears to us that your object in pushing limited entry is not to improve the economic status of commercial fishermen but a method to eliminate the industry. Your plans, if carried out, would result in eliminating the majority of the fishermen and putting the rest in a position where they would be unable to earn a living.

There are indications that have led us to believe that the Department also believes that all commercial fishermen are dishonest and that commercial fishing is immoral, illegal, an affront to sportsmen, or some other dastardly activity. We feel that it is about time that we are treated as legitimate businessmen and not persecuted and continually treated as disreputable citizens. The uncooperativeness displayed by a few of the commercial fishermen is the direct result of the attitude of the Department. Over the past several years the Department has taken action to restrict the commercial fishery and change the state laws contrary to the state of the resource. It verges on mismanagement of an important and valuable resource and an affront to the commercial fishermen and the general public who have a right to expect responsible state service. The constant belittling of the commercial fisherman must stop.

Let us all work together to achieve biologically sound management of the fisheries of the Great Lakes in an honest, above board fashion. We are ready and willing to meet you half way on this and to get down to the business at hand rather than this constant bickering and underhanded fighting.

MICHIGAN

DEPARTMENT OF CONSERVATION

COMMERCIAL FISHING

ORDER NO. 16

(By authority conferred on the commission of conservation by section 1 of Act No. 218 of the Public Acts of 1955, as amended, and by sections 9 and 252 of Act No. 380 of the Public Acts of 1965, being sections 308.201, 16.109 and 16.352 of the Compiled Laws of 1948.)

R 299.841. Modification of statutory provisions.

To prohibit the use of gill nets with meshes 4-1/2 inches or larger in all waters of Lakes Superior and Michigan, and gill nets with meshes 1-1/2 to 1-3/4 inches and with meshes 2-1/2 to 3 inches in the waters of Lakes Michigan and Superior in water depths of less than 35 fathoms, except under permit issued under authority of section 10 of Act No. 84 of the Public Acts of 1929, being section 308.10 of the Compiled Laws of 1948, the provisions of subsections (a), (b), (c), (d) and (e) of section 5 of Act No. 84 of the Public Acts of 1929, as amended, being section 308.5 of the Compiled Laws of 1948, are modified, effective April 1, 1968, by rules R 299.842 to R 299.844.

R 299.842. Use of gill nets in waters of the great lakes.

1. Gill nets with meshes of 4-1/2 inches, or larger, shall not be set in the waters of Lake Superior and Lake Michigan except under authority of a permit issued by the director of conservation for scientific and research purposes under authority of section 10 of Act No. 84 of the Public Acts of 1929.

2. Gill nets with meshes of not less than 1-1/2 inches nor more than 1-3/4 inches for taking smelt and alewives and gill nets with meshes of not less than 2-1/2 inches nor more than 3 inches for the purpose of taking perch, suckers, herring, chubs and menominees may not be set in the waters of Lake Superior and Lake Michigan in water of a less depth than 35 fathoms except under authority of a permit issued by the department of conservation for scientific and research purposes under authority of section 10 of Act No. 84 of the Public Acts of 1929.

3. Gill nets with meshes of 1-1/2 to 1-3/4 inches and 2-1/2 to 2-3/4 inches set in water of a depth in excess of 35 fathoms shall be fished with botton maitre cord or lead line on the bottom of the lake, except in the waters of Lake Superior gill nets with meshes 2-1/2 to 2-3/4 inches may be fished off the lake bottom for the purpose of taking herring. The top line of such nets shall not be less than 20 feet below the surface of the water as set.

R 299.843. Permits for use of gill nets.

1. Permits issued under authority of section 10 of Act No. 84 of the Public Acts of 1929 may be amended or suspended to restrict or prohibit the use of gill nets in waters where significant numbers of fish other than those

authorized to be taken are caught or killed, and the director may revoke the permit of any fisherman who fails to abide by the terms and conditions of the permit. All such permits shall expire on December 31 following date of issue unless sooner revoked.

2. Fishing operations under authority of such permits may be temporarily suspended by the director or his representative when necessary to protect salmonid species.

3. No such permit shall be amended, revoked or suspended, other than temporarily suspended, by action of the director unless 5 days prior notice, in writing, has been given to the permittee.

4. Disposition of all dead fish of the salmonid species taken by fishermen operating under authority of such permits shall be made in accordance with the terms and conditions set forth in such permits.

R 299.844. Disposition of fish other than those lawful to take.

All live fish, except alewives, smelt, herring, chubs, perch, menominees, and suckers taken in lawful gill nets with meshes of 2-3/4 inches or less set in waters of a depth in excess of 35 fathoms shall be returned to the waters from which they were taken with as little injury as possible by the persons lifting the nets. All sound, dead fish of any other species found in the nets shall be the property of the State and shall not be sold or disposed of, but shall be dressed, iced, or otherwise chilled and brought ashore by the person taking them. Disposal of such fish shall be made to agencies or persons qualified to receive them in accordance with written authorization from the director or his representative, or in the absence of such authorization a report of the quantity and location of such fish being held shall be promptly made to the local conservation officer, and such fish shall not be removed or transported from the landing point or dock of the person taking them without prior authorization. Parties handling such fish shall be paid not to exceed 15 cents per pound for dressing, boxing, packing, and icing the fish. The director shall remove or cause to be removed any of such nets when he determines that such nets are taking significant numbers of fish of the species other than alewives, smelt, herring, chubs, perch, suckers, and menominees.

R 299.845. Suspension of statutory authority.

The provisions of subsection 2 of section 6 of Act No. 84 of the Public Acts of 1929, as amended, being section 308.6 of the Compiled Laws of 1948, insofar as they restrict the use of gill nets in northern Lake Michigan and Green Bay, are suspended, effective April 1, 1968.

General amendments, etc., to gill net permits

1. April 10, 1968. Amendment No. 1. (Lake Superior)
   Change Item No. 15 to read:
   "Gill nets of 2½- to 3-inch mesh may be set from the bottom to within 20 feet below the surface, in Lake Superior, for the purpose of taking herring during the period April 15, 1968, to 12 o'clock noon May 15, 1968."

2. May 13, 1968. Amendment No. 2 (Lake Superior)
   Item No. 15 is hereby amended to read:

   "As of 12 o'clock noon May 15, 1968, and until further notice of a change in this provision, gill nets of 2½- to 3-inch mesh may be set from the bottom to within 20 feet below the surface, in Lake Superior, for the purpose of taking herring."

3. July 9, 1968. Amendment No. 3 (Lake Superior)
   "Due to the continued high incidental take of lake trout and the low catch of whitefish in all the Michigan waters of Lake Superior (except those surrounding Isle Royale) all the waters of Lake Superior (except those immediately adjacent to Isle Royale) will be closed until further notice to the fishing of 4½-inch and larger mesh gill nets as of 12 o'clock noon July 15, 1968."

4. July 9, 1968. Amendment No. 4 (Lake Superior)
   Item No. 15 has been amended as of July 11, 1968, and until further notice, to read as follows:
   "Gill nets of 2½ to 3-inch mesh may be set from the bottom to within 8 feet below the surface in Lake Superior, for the purpose of taking herring."
   This amendment supercedes all previous amendments and changes in provision No. 15.

5. July 12, 1968. Communication to trout assessment fishermen informing them that the ban on large mesh gill nets in Lake Superior does not apply to the scheduled trout sampling program. Copy attached.

6. April 16, 1968. "No large mesh gill net (4½ or larger) may be fished in Lake Michigan north of a line from Point Detour to St. James on Beaver Island, to Waugoshance Point during the period April 19 through May 2, 1968. Except a maximum of six fishermen, to be chosen by the commercial fishing industry and approved by the Department of Conservation, will be allowed to prospect for whitefish with large mesh gill net in this area with a maximum of 15,000 feet of gill net each."
   Permittees selected to "prospect for whitefish" were:
   Jerome Peterson, Manistique, Permit No. 4-8, Lic. No. 296
   C & R Halberg, St. Ignace, Permit No. 4-10, Lic. No. 424
   Melvin Sellman, Manistique, Permit No. 4-18, Lic. No. 549
   John LeClair, Naubinway, Permit No. 3-31, Lic. No. 520
   R. Tallman, Bayview Addition, Permit. No. 3-36, Lic. No. 622
   Wayne Wachter, Marquette, Permit. No. 4-29, Lic. No. 751

7. May 2, 1968. The area of Lake Michigan that was closed (April 19 - May 2) was reopened under close surveillance. Catch of trout continued to be sitnificant, but was not stopped.

8. May 28, 1968. "It is hereby ordered that all areas in Lake Michigan between a line running west out of Frankfort Harbor and a line running west out of Leland, under 35 fathoms, will be closed to gill netting, effective June 1, 1968." Reason: excessive catches of trout.

9. June 18, 1968. "The following area will be closed to all gill net fishing in waters less than 35 fathoms:

   All waters of Grand Traverse Bay south of a line from Lighthouse Point to Norwood.
   This order becomes effective June 19, and will remain in effect until further notice.

   Excessive numbers of trout are being taken in proportion to other fish, thus, we feel it is necessary to close the area temporarily."

WRC:jh

7-24-68

STATE OF MICHIGAN

74TH LEGISLATURE

REGULAR SESSION OF 1968

Introduced by Reps. James F. Smith and Baker

ENROLLED HOUSE BILL No. 3917

AN ACT to amend the title and section 1 of Act No. 84 of the Public Acts of 1929, entitled as amended "An act to protect fish and to preserve the fisheries of this state; to regulate the taking of fish in the waters of lakes Superior, Michigan, Huron, and Erie, and the bays thereof, and the connecting waters between said lakes within the jurisdiction of this state; to regulate the transportation, sale and possession of fish in this state; to provide for the issuing of licenses and permits pertaining thereto and the disposition of the moneys derived therefrom; to provide for the confiscation of property used or possessed in violation of this act; to provide penalties for the violations of the provisions of this act, and to repeal certain acts relating thereto," being section 308.1 of the Compiled Laws of 1948; and to add 4 new sections to stand as sections 1b to 1e.

The People of the State of Michigan enact:

Section 1. The title and section 1 of Act No. 84 of the Public Acts of 1929, being section 308.1 of the Compiled Laws of 1948, are amended and 4 new sections to stand as sections 1b to 1e are added, the amended title and amended and added sections to read as follows:

TITLE

An act to protect fish and to preserve the fisheries of this state; to regulate the taking of fish in the waters of lakes Superior, Michigan, Huron, and Erie, and the bays thereof, and the connecting waters between the lakes within the jurisdiction of this state; to prescribe the powers and duties of the director of conservation; to provide for financial remuneration to this state for fish taken for commercial purposes and disposition of moneys derived therefrom; to provide for establishment of great lakes fishery advisory committee and prescribe its powers and duties; to regulate the transportation, sale and possession of fish in this state; to provide for the issuing of licenses and permits pertaining thereto and the disposition of the moneys derived therefrom; to provide for the confiscation of property used or possessed in violation of this act; and to provide penalties for the violations of the provisions of this act.

Sec. 1. All fish of whatever kind found in the waters of lakes Superior, Michigan, Huron and Erie, commonly known as the Great Lakes, and the bays thereof and the connecting waters between the lakes within the jurisdiction of this state, shall be, and are declared to be, the property of the state and the taking thereof is declared to be a privilege. All fish in such waters shall be taken, transported, sold and possessed only in accordance with the provisions of this act.

(212)

Sec. 1b. (1) Notwithstanding the provisions of this or any other act, the director of conservation, when in his opinion it is necessary for the better protection, preservation, management, harvesting and utilization of the fisheries in the waters described in section 1 may limit the number of fishing licenses to be issued under the provisions of this act and fix and determine the qualifications of such licensees. In determining the number of licenses that the director of conservation issues during any license year, he shall take into consideration the number of persons holding such licenses, the number of licensees needed to harvest the fish known or believed to be harvestable, the capacity of the boats and equipment owned and used by licensees to effectuate such harvesting, and any other facts which may bear upon the allowing of a limited number of licensed persons to engage in commercial fishing in an economical and profitable manner. In determining the qualifications of the licensees, the director of conservation shall consider the kind, nature and condition of the boats and fishing equipment and gear to be used by the applicant, the years of experience the applicant has had in commercial fishing and the quantity and kinds of fish that the applicant has caught during the previous 5 years and such other facts which may assist him in determining that the applicant is capable to engage in commercial fishing in a proper and profitable manner and will comply with the laws applicable to commercial fishing.

(2) In addition to the requirements of this act and rules promulgated pursuant to this act, the license issued by the director of conservation may contain provisions:

(a) Fixing the amount of fish to be taken by species and kind.

(b) Designating the areas in which the licensee shall be permitted to fish.

(c) Specifying the season when and the depths where the licensee may conduct his commercial fishing operations.

(d) Specifying the methods and gear which the licensee shall use.

(e) Specifying other conditions, terms and restrictions which are deemed to be necessary in carrying out the provisions of this act, including but not limited to the right to inspect the licensee's fishing operations in the waters, on board or ashore.

(3) All licenses issued by the director pursuant to this act shall expire on December 31 of the year in which issued.

(4) The director of conservation may suspend or revoke any license issued under this act when the licensee fails to fulfill or violates any of the conditions, terms or restrictions of the license. The director shall afford the licensee a hearing in accordance with the provisions of Act No. 197 of the Public Acts of 1952, as amended, being sections 24.101 to 24.110 of the Compiled Laws of 1948. Any person whose license has been suspended or revoked shall not be eligible to apply for or receive a license for the ensuing 2 calendar years following such suspension or revocation.

(5) Any licensee presently licensed at the time this section becomes effective shall have the right to have his license renewed from year to year by the director of conservation if such licensee continues to meet the qualifications set forth in this section and the qualifications specified in any rules promulgated under this section regardless of the determination of the number of licenses to be issued hereunder. Such licenses so issued shall not be transferable without the permission of the director.

Sec. 1c. The conservation commission shall provide a financial remuneration to the state for fish taken for commercial purposes by collection from the licensee of not more than 5% of the price received by the licensee. Moneys received shall be credited to the fish and game protection fund to be used in the development and management of the fisheries resource.

Sec. 1d. The governor shall appoint a great lakes fishery advisory committee to advise the director of conservation on matters affecting the great lakes fisheries as submitted to it by the director. The committee shall consist of not more than 9 members. The terms of office shall be 3 years, except that of the members first appointed, 3 shall be appointed for 3 years, 3 for 2 years and 3 for 1 year, or if a lesser number than 9 are appointed, their terms of office shall be prorated accordingly. The members of the advisory committee shall be entitled to actual and necessary expense incurred in the

performance of their advisory duties in accordance with standard travel regulations of the department of administration.

Sec. 1e. For the purpose of carrying out the provisions of sections 1b to 1e, the director of conservation may promulgate such rules as may be necessary in accordance with the provisions of Act No. 88 of the Public Acts of 1943, as amended, being sections 24.71 to 24.80 of the Compiled Laws of 1948, and subject to Act No. 197 of the Public Acts of 1952, as amended. Sections 1b to 1e do not apply to Lake Erie.

_____

Clerk of the House of Representatives.

_____

Secretary of the Senate.

Approved_____

_____

Governor.

DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

PROPOSED
POLICY ON MANAGEMENT OF THE GREAT LAKES FISHERIES

The Great Lakes comprise the largest freshwater resource in the world. As such, they are of great importance.

Lake Superior and Lake Michigan are partly within the state of Wisconsin. The states of Michigan, Minnesota, Illinois and Indiana, the Province of Ontario and the federal governments of the United States and Canada also have jurisdiction. Therefore, these waters are of interstate as well as international concern.

Historically, the Great Lakes have been important as routes of exploration in settling North America, as routes of commerce, for water supply and effluent disposal, for commercial fishing for food, and sport fishing for recreation and for general recreation.

The Wisconsin Legislature has delegated to the Natural Resources Board the responsibility" . . . to provide an adequate and flexible system for the protection, development and use of the . . . fish, . . . lakes, streams . . . and other outdoor resources in the state of Wisconsin." (ss. 23.09).

With increasing demand for and use of Great Lakes waters and a constantly expanding population, there is an increasing need to protect and properly manage such waters. In this regard, the Natural Resources Board reaffirms its policy on the "Protection, Development and Use of Water" with specific reference here to Lake Superior and Lake Michigan. The Board also reaffirms its position as expressed on all other policies issued in past years, as they apply to the Great Lakes, such as its statements on fish, trout management, rough fish, research, public access and long-range planning.

With the invasion into the Great Lakes of the sea lamprey; the near extinction of the lake trout followed by efforts towards sea lamprey control and lake trout restoration; the invasion of the alewife with associated problems; increasing general and recreational use of the waters; the introduction of exotic species of fish such as the coho salmon; the potential for additional successful introductions and fish management; the probable future demands on the recreational values involved, and additional factors not specifically mentioned, the following additional guiding principles are enunciated with specific regard to the Great Lakes.

* * * * * *

The policy of the Natural Resources Board governing fish management in the Great Lakes and Green Bay is to maintain, restore, improve and manage the waters and fish populations to produce the greatest good recreationally, aesthetically and economically for the greatest number of people through both sport and commercial fisheries. These objectives are to be attained on a sustained basis in balance with the needs for inland water management.

In the management of the Great Lakes fisheries, the aim is maximum sustained yield of the most desirable species and sizes from the recreational and commercial viewpoints. The intent of management shall be to uphold the precedence of sport fishing in the harvest of Great Lakes fishes, since this provides the greatest economic return to society. Commercial harvest shall be specifically regulated to prevent over exploitation yet permit utilization and prevent waste of the available surplus of fish over that needed to effectively manage the sport fishery or to meet management objectives of improving populations of the most desirable species and maintaining ecological balance.

The general guide in the lake trout restoration program is to restore, if possible, a self-sustaining population of such fish as rapidly as possible taking into consideration all factors involved. Commercial harvest of lake trout is warranted only on wild, self-sustaining stocks not needed in the sport fishery.

Exotic species should be managed or introduced on the basis of sound biological and economic facts and in consonance with their potential to produce additional total fishery values.

In managing commercial fishing on the Great Lakes in consonance with the overall policy, the objectives to be sought are maximum economic value of the fish harvested, minimum interference with the sport fish harvest and other recreation, and a reasonable livelihood from commercial fishing for a limited number of full time commercial fishermen realized through increasingly more efficient operations.

In the execution of this policy, determinations and decisions are to be made using all biological and economic facts available. If the necessary facts or statistics are not immediately available, interim management decisions are to be made using available facts and a program of further fact-finding should be carried out

Fish and water management in the Great Lakes is a matter of interstate and international concern. Interstate and international cooperation is to be sought and extended to the maximum extent possible to carry out Wisconsin policy.

7-12-68
ncm

STATE OF WISCONSIN

Assembly Bill 14 Date published*: July 8, 1967

CHAPTER 63 , LAWS OF 1967

AN ACT to amend 29.33 (1) of the statutes, relating to limited entry for net and set hook fishing in the outlying waters of Lake Superior, and granting rule-making authority.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

29.33 (1) of the statutes is amended to read:

29.33 (1) Any person desiring to conduct commercial fishing operations on any of the outlying waters shall first obtain a commercial fishing license. The conservation commission may limit the number of such licenses to be issued and designate the areas in the outlying waters of Lake Superior under the jurisdiction of this state where such licensees may conduct commercial fishing operations. These determinations shall be based on the available harvestable population of fish and in the wise use and conservation of such fish so as to prevent overexploitation. The commission may adopt rules defining the qualifications of licensees in the reasonable exercise of this authority, giving due consideration to residency, past record, fishing and navigation ability and quantity and quality of equipment possessed. The application for such license shall be made to the conservation commission on a blank provided for that purpose, accompanied by the fee specified in sub. (2). Such application shall state the name and residence of the applicant, the manner in which he proposes to fish, the name or number, over-all length, gross tonnage , and value of his boat, the name of the port from which the boat will operate, and the number and kind of nets and hooks or other gear he intends to use, the value of his real estate used in connection with commercial fishing and

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*Section 990.03, *Wisconsin Statutes*: **Laws and acts; time of going into force.** "Every law or act which does not expressly prescribe the time it takes effect shall take effect on the day after its publication."

such other information as ~~may be~~ is required for statistical purposes. "Over-all length" means the minimum distance between th extreme outside end of the bow and the stern using the nearest whole number of feet. The license fee shall be based on the over-all length of the boat if a boat is used. Such license shall be issued ~~,~~ in accordance with s. 29.09 ~~,~~ ~~to any duly qualified applicant~~.

STATE OF WISCONSIN NATURAL RESOURCES BOARD

IN THE MATTER of creating section WCD 25.075 of the Wisconsin Administrative Code relating to commercial fishing in the outlying waters of Lake Superior	Order No. F-3-68 (E)

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD

ADOPTING, AMENDING AND REPEALING RULES

Pursuant to authority vested in the State of Wisconsin Natural Resources Board by sections 29.085 and 29.33, Wis. Stats., and section 25 of Chapter 75, Laws of 1967, and pursuant to section 227.027 (1), the State of Wisconsin Natural Resources Board hereby creates rules as follows:

WCD 25.075 of the Wisconsin Administrative Code is created to read:

WCD 25.075 Limited entry; Lake Superior. Pursuant to authority vested in the State of Wisconsin Natural Resources Board by section 29.33, Wis. Stats., and section 25 of Chapter 75, Laws of 1967, the State of Wisconsin Natural Resources Board finds and determines that the following rules are reasonably necessary in the wise use and conservation and to prevent over-exploitation of fish in the outlying waters of Lake Superior under the jurisdiction of the State of Wisconsin.

(1) Not more than 68 licenses authorizing commercial fishing in Lake Superior shall be issued and effective pursuant to section 29.33, Wis. Stats., for the license period beginning July 1, 1968 and ending June 30, 1969.

(2) No applicant shall be eligible for such license unless he shall have held a State of Wisconsin commercial fishing license during each of the 2 year licensing periods immediately preceding and ending June 30, 1968, or unless he shall have been a member or partner in a fishing crew operating in the waters of Lake Superior under a State of Wisconsin commercial fishing license during each of the previous 5 year licensing periods immediately preceding and ending June 30, 1968.

(3) Such licenses shall be issued according to the following residence priorities to applicants otherwise qualified:

(a) First to residents of counties bordering Lake Superior.

(b) Next to residents of other counties.

(c) Next to nonresidents.

(4) Applicants for such licenses shall be at least 21 years of age.

(5) Applications for such licenses shall be filed with the department not later than April 30, 1968 on department forms provided for such purpose.

The rules contained herein shall take effect on the day of publication in the official state paper as provided in section 227.027 (1), Wis. Stats., as emergency rules. Facts constituting the emergency are as follows:

Commercial fishing licenses become effective on July 1, 1968. In order to fix a reasonable deadline for the filing of applications for licenses under the limited entry authority contained in section 29.33 (1), Wis. Stats., as amended by Chapter 63, Laws of 1967, it is necessary that such rules be published as emergency rules. It is impossible to comply with the filing of publication requirements under Chapter 227 of the Statutes and at the same time control the number of licenses issued to provide for a reasonable and controlled harvest of certain species of fish in Lake Superior.

The preservation of the public welfare necessitates the adoption of such rules as emergency rules.

DATED STATE OF WISCONSIN NATURAL RESOURCES BOARD

March 27, 1968 By /s/ L. P. Voigt
L. P. Voigt, Secretary

APPROVED:

/s/ Warren P. Knowles
GOVERNOR

March 28, 1968
DATE

(continued from inside front cover)

14. A Price Incentive Plan for Distressed Fisheries by A. A. Sokoloski and E. W. Carlson.

15. Demand and Prices for Shrimp by D. Cleary.

16. Industry Analysis of Gulf Area Frozen Processed Shrimp and an Estimation of Its Economic Adaptability to Radiation Processing by D. Nash and M. Miller.

17. An Economic Evaluation of Columbia River Anadromous Fish Programs by J. A. Richards.

18. Economic Projections of the World Demand and Supply of Tuna, 1970 - 90 by F. Bell.

19. Economic Feasibility of a Seafood Processing Operation in the Inner City of Milwaukee by D. Cleary.

20. The 1969 Fishing Fleet Improvement Act: Some Advantages of its Passage by the Division of Economic Research.

21. An Economic Analysis of Policy Alternatives for Managing the Georges Bank Haddock Fishery by L. W. Van Meir.

22. Some Analyses of Fish Prices by F. Waugh and V. Norton.

23. Some Economic Characteristics of Pond-Raised Catfish Enterprises by J. E. Greenfield

24. Elements Crucial to the Future of Alaska Commercial Fisheries by D. Nash, A. Sokoloski, and D. Cleary.

25. Effects on the Shrimp Processing Industry of Meeting the Requirements of Wholesome Fishery Products Legislation by D. Nash and M. Miller.

26. Benefit Cost Analysis of a Proposed Trawl Systems Program by M. Miller.

27. An Economic Analysis of Future Problems in Developing the World Tuna Resource: Recommendations for the Future Direction of the BCF Tuna Program by F. Bell.

28. Economic Efficiency in Common Property Natural Resource Use: A Case Study of the Ocean Fishery by D. W. Bromley

29. Costs, Earnings and Borrowing Capacity for Selected U. S. Fisheries, by A. Sokoloski, E. Carlson, and B. Noetzel.

30. Fish Cycles: A harmonic analysis by F. Waugh and M. Miller.

31. Benefit-Cost Analysis as Applied to Commercial Fisheries Programs, by F. Bell.

32. Economic Study of San Pedro Wetfish Boats by W. F. Perrin and B. Noetzel.

33. A Survey of Fish Purchases by Socio-Economic Characteristics - First Quarterly Report - February, May, April, 1969 by Darrel A. Nash.

34. A Survey of Fish Purchases by Socio-Economic Characteristics, Second Quarterly Report - May June July by D. Nash.

35. A Simplified Guide to Benefit-Cost Analysis for BCF Programs by F. Bell .

36. Estimation of the Optimal Number of Vessels in a Fishery: Theoretical and Empirical Basis for Fishery Management by F. Bell .

37. Major Economic Trends in Selected U.S. Master Plan Fisheries: A Graphical Survey by Richard K. Kinoshita and Frederick W. Bell

38. Market Potential for the San Pedro Wetfish Fishery by D. Nash

The goal of the Division of Economic Research is to engage in economic studies which will provide industry and government with costs, production and earnings analyses; furnish projections and forecasts of food fish and industrial fish needs for the U. S.; develop an overall plan to develop each U. S. fishery to its maximum economic potential and serve as an advisory service in evaluating alternative programs within the Bureau of Commercial Fisheries.

In the process of working towards these goals an array of written materials has been generated representing items ranging from interim discussion papers to contract reports. These items are available to interested professionals in limited quantities of offset reproduction. These "Working Papers" are not to be construed as official BCF publications and the analytical techniques used and conclusions reached in no way represent a final policy determination endorsed by the U. S. Bureau of Commercial Fisheries.